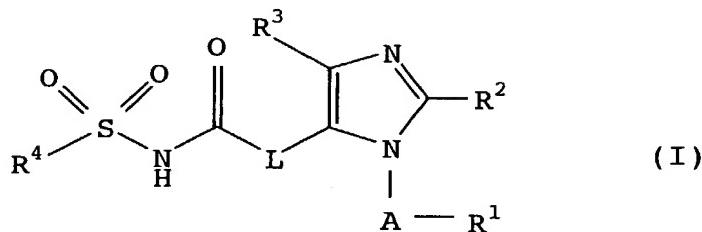


WHAT IS CLAIMED IS

1. An imidazole compound of the formula (I):



5 wherein

R¹ is an aryl or heterocyclic group substituted by a substituent selected from the group consisting of (1) aryl, (2) heterocyclic group, (3) halogen, (4) halo(lower)alkyl, (5) lower alkylthio, (6) nitro, (7) lower alkenyl optionally substituted by aryl, (8) lower alkynyl optionally substituted by aryl, (9) lower alkoxy optionally substituted by cyclo(lower)alkyl or aryl, (10) aryloxy and (11) amino optionally substituted by protected carboxy or lower alkyl;

15 R² is a lower alkyl;

R³ is a hydrogen, halogen, lower alkyl or nitro;

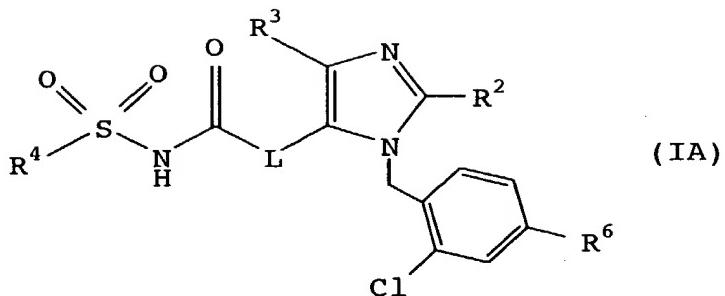
R⁴ is (1) a lower alkenyl optionally substituted by aryl or heterocyclic group, (2) aryl optionally substituted by lower alkenyl, (3) lower alkyl, or (4) heterocyclic group optionally substituted by halogen;

A is a lower alkylene; and

L is a single bond, lower alkenylene or lower alkylene optionally substituted by aryl or heterocyclic group, or -X-CH₂- where X is -O-, NR⁵ where R⁵ is hydrogen or lower alkyl, or -S-,

or a salt thereof.

2. The imidazole compound of claim 1, which has the formula (IA):



wherein

R² is methyl;

R³ is chlorine;

R⁴ is (1) lower alkenyl optionally substituted by aryl, (2) aryl, (3) lower alkyl, or (4) heterocyclic group optionally substituted by halogen;

R⁶ is (1) aryl, (2) heterocyclic group, (3) bromine, (4) halo(lower)alkyl, (5) lower alkylthio, (6) nitro, (7) lower alkenyl substituted by aryl, (8) lower alkynyl substituted by aryl, (9) lower alkoxy optionally substituted by cyclo(lower)alkyl or aryl, (10) lower alkyl optionally substituted by aryloxy, or (11) amino optionally substituted by protected carboxy or lower alkyl; and

L is ethenylene,

or a salt thereof.

3. The imidazole compound of claim 2, wherein R⁴ is aryl, or lower alkenyl optionally substituted by aryl, R⁶ is bromine, lower alkenyl substituted by aryl, lower alkynyl substituted by aryl, or lower alkoxy optionally substituted by cyclo(lower)alkyl, or a salt thereof.

4. The imidazole compound of claim 1, wherein R¹ is heterocyclic group substituted by a substituent selected from the group consisting of (1) aryl, (2) heterocyclic group, (3) halogen, (4) halo(lower)alkyl, (5) lower alkylthio, (6) nitro, (7) lower alkenyl optionally substituted by aryl, (8) lower alkynyl optionally substituted by aryl, (9) lower alkoxy optionally substituted by cyclo(lower)alkyl or aryl, (10) aryloxy and (11) amino optionally substituted by protected carboxy or lower alkyl, or a salt thereof.

5. The imidazole compound of claim 1, which is:

- (1) (E)-3-(4-chloro-1-(2-chloro-4-(2-furyl)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
(2) (2E)-3-(4-chloro-1-(2-chloro-4-(2-furyl)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-
5 propenamide,
(3) (E)-3-(4-chloro-1-(2-chloro-4-(2-thienyl)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
(4) (2E)-3-(4-chloro-1-(2-chloro-4-(2-thienyl)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-
10 propenamide,
(5) (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
(6) (2E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-
15 propenamide,
(7) (E)-3-(1-(4-bromo-2-chlorobenzyl)-4-chloro-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
(8) (E)-3-(1-(4-bromo-2-chlorobenzyl)-4-chloro-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propenamide,
20 (9) (E)-3-[4-chloro-1-(2-chloro-4-phenylbenzyl)-2-methylimidazol-5-yl]-N-(1-pentanesulfonyl)-2-propenamide,
(10) (E)-N-benzenesulfonyl-3-[4-chloro-1-(2-chloro-4-phenylbenzyl)-2-methylimidazol-5-yl]-2-propenamide,
(11) (E)-3-[4-chloro-1-(2-chloro-4-phenylbenzyl)-2-methylimidazol-5-yl]-N-((4-methylbenzene)sulfonyl)-2-propenamide,
25 (12) (E)-3-(4-chloro-1-(2-chloro-4-phenylbenzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propenamide,
(13) (E)-3-(4-chloro-1-(2-chloro-4-phenylbenzyl)-2-methylimidazol-5-yl)-N-((5-chloro-2-thienyl)sulfonyl)-2-propenamide,
30 (14) (E)-N-((5-bromo-2-thienyl)sulfonyl)-3-(4-chloro-1-(2-chloro-4-phenylbenzyl)-2-methylimidazol-5-yl)-2-propenamide,
(15) (E)-3-((4-chloro-1-(2-chloro-4-(1-propoxy)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
35 (16) (E)-3-(4-chloro-1-(2-chloro-4-(1-propoxy)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-
propenamide,
(17) (E)-3-(4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
40 (18) (E)-3-(4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-

- propenamide,
- (19) (E)-3-(4-chloro-1-(2-chloro-4-((cyclopentyl)methoxy)-benzyl)-2-methylimidazol-5-yl)-N-(1-pentanesulfonyl)-2-propenamide,
- (20) (E)-3-(4-chloro-1-(2-chloro-4-((cyclopentyl)methoxy)-benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
- 5 (21) (2E)-3-(4-chloro-1-(2-chloro-4-((cyclopentyl)methoxy)-benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propenamide,
- 10 (22) (E)-3-(4-chloro-1-(2-chloro-4-((cyclohexyl)methoxy)-benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
- (23) (2E)-3-(4-chloro-1-(2-chloro-4-((cyclohexyl)methoxy)-benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propenamide,
- 15 (24) (E)-3-(1-(4-benzyloxy-2-chlorobenzyl)-4-chloro-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
- (25) (E)-3-(1-(4-benzyloxy-2-chlorobenzyl)-4-chloro-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-
- 20 propenamide,
- (26) (E)-3-(4-chloro-1-(2-chloro-4-(methylthio)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
- (27) (E)-3-(4-chloro-1-(2-chloro-4-(methylthio)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-
- 25 propenamide,
- (28) (E)-3-(4-chloro-1-(2-chloro-4-(trifluoromethyl)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
- (29) (E)-3-(4-chloro-1-(2-chloro-4-(trifluoromethyl)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-
- 30 propenamide,
- (30) (E)-3-(4-chloro-1-(2-chloro-4-(phenoxyethyl)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
- (31) (E)-3-(4-chloro-1-(2-chloro-4-(phenoxyethyl)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-
- 35 propenamide,
- (32) (E)-3-(4-chloro-1-(2-chloro-4-nitrobenzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
- (33) (E)-3-(4-chloro-1-(2-chloro-4-nitrobenzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propenamide,
- 40 (34) (E)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-

- methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
(35) (E)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propenamide,
5 (36) (E)-3-(1-(1-bromo-2-naphthyl)-4-chloro-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
(37) (E)-3-(1-(1-bromo-2-naphthyl)-4-chloro-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propenamide,
(38) (E)-3-(4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-N-(1-pentanesulfonyl)-2-propenamide,
10 (39) (E)-3-(4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-N-((E)-1-penten-1-ylsulfonyl)-2-propenamide,
(40) (E)-N-(1-butanesulfonyl)-3-(4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-2-propenamide,
15 (41) (E)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-methylimidazol-5-yl)-N-(1-pentanesulfonyl)-2-propenamide,
(42) (E)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-methylimidazol-5-yl)-N-((E)-1-penten-1-ylsulfonyl)-2-propenamide,
(43) (E)-N-(1-butanesulfonyl)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-methylimidazol-5-yl)-2-propenamide,
20 (44) (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-methylimidazol-5-yl)-N-(1-pentanesulfonyl)-2-propenamide,
(45) (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-methylimidazol-5-yl)-N-((E)-1-penten-1-ylsulfonyl)-2-propenamide,
25 (46) (E)-N-(1-butanesulfonyl)-3-(4-chloro-1-(2-chloro-4-(2-phenylethynyl)benzyl)-2-methylimidazol-5-yl)-2-propenamide,
(47) (E)-3-(4-chloro-1-((3-chloro-5-(trifluoromethyl)pyridin-2-yl)methyl)-2-methylimidazol-5-yl)-N-((E)-2-phenylethenylsulfonyl)-2-propenamide,
30 (48) (E)-3-(4-chloro-1-((3-chloro-5-(trifluoromethyl)pyridin-2-yl)methyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
(49) (E)-3-(1-(4-(tert-butoxycarbonylamino)-2-chlorobenzyl)-4-chloro-2-methylimidazol-5-yl)-N-(1-pentanesulfonyl)-2-propenamide,
35 (50) (E)-3-(1-(4-(tert-butoxycarbonylamino)-2-chlorobenzyl)-4-chloro-2-methylimidazol-5-yl)-N-((E)-1-penten-1-ylsulfonyl)-2-propenamide,
(51) (E)-3-(1-(4-(tert-butoxycarbonylamino)-2-chlorobenzyl)-4-chloro-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propenamide,
40

- (52) (E)-3-(4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-ethylimidazol-5-yl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
(53) (E)-3-(1-(4-bromo-2-chlorobenzyl)-4-chloro-2-ethylimidazol-5-yl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
5 (54) (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
(55) (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
(56) (E)-N-(1-butanesulfonyl)-3-(4-chloro-1-(2-chloro-4-phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-2-propenamide,
10 (57) (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-N-(1-pentanesulfonyl)-2-propenamide,
(58) (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-N-((E)-1-penten-1-ylsulfonyl)-2-propenamide,
15 (59) (E)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-ethylimidazol-5-yl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
(60) (E)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-ethylimidazol-5-yl)-N-(4-methylbenzenesulfonyl)-2-propenamide,
(61) (E)-N-(1-butanesulfonyl)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-2-propenamide,
20 (62) (E)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-ethylimidazol-5-yl)-N-(1-pentanesulfonyl)-2-propenamide,
(63) (E)-3-(4-chloro-1-(2-chloro-4-((E)-2-phenylethenyl)benzyl)-2-ethylimidazol-5-yl)-N-((E)-1-penten-1-ylsulfonyl)-2-propenamide,
25 (64) (E)-3-(1-(4-bromo-2-chlorobenzyl)-2,4-dimethylimidazol-5-yl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
(65) (E)-3-(4-bromo-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
(66) (E)-3-(1-(2-chloro-4-(1-pentyloxy)benzyl)-4-ethyl-2-methylimidazol-5-yl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
30 (67) (E)-2-benzyl-3-(1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
(68) (E)-3-(1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-2-(1-pentyl)-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
35 (69) (E)-3-(1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-2-(3-pyridyl)methyl-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
(70) (E)-3-(1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-2-methyl-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
40 (71) (E)-3-(4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-

- methylimidazol-5-yl)-2-methyl-N-((E)-2-phenylethenesulfonyl)-2-propenamide,
- (72) 4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methyl-5-((E)-2-phenylethenesulfonylcarbamoyl)-1H-imidazole,
- 5 (73) (4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methyl-1H-imidazol-5-yl)methyl N-(4-methylbenzenesulfonyl) carbamate,
- (74) 4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-5-((3-(4-methylbenzenesulfonyl)ureido)methyl)-2-methyl-1H-imidazole,
- (75) 4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-5-((3-(4-methylbenzenesulfonyl)-1-methylureido)methyl)-2-methyl-1H-imidazole or
- (76) 3-(4-chloro-1-(2-chloro-4-(phenylacethynyl)benzyl)-2-ethylimidazol-5-yl)-N-((E)-1-penten-1-ylsulfonyl)-(E)-2-propenamide,
- 15 or a salt thereof.

6. The imidazole compound of claim 1, which is:
- (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-methylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propanamide,
- 20 (E)-3-(4-chloro-1-(2-chloro-4-(1-pentyloxy)benzyl)-2-methylimidazol-5-yl)-N-(((E)-2-phenylethenyl)sulfonyl)-2-propanamide,
- (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-N-((4-methylbenzene)sulfonyl)-2-propenamide,
- 25 (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-N-(1-pentanesulfonyl)-2-propenamide or
- (E)-3-(4-chloro-1-(2-chloro-4-(phenylethynyl)benzyl)-2-ethylimidazol-5-yl)-N-((E)-1-penten-1-ylsulfonyl)-2-propenamide,
- or a salt thereof.

- 30 7. A pharmaceutical composition containing the imidazole compound of claim 1 or a pharmaceutically acceptable salt thereof.

8. A pharmaceutical preparation containing the imidazole compound of claim 1 or a pharmaceutically acceptable salt thereof, which is used as an agent for the prophylaxis and/or treatment of impaired glucose tolerance disorder, diabetes, gestational diabetes, diabetic complications, insulin resistance syndrome, polycystic ovary syndrome, hyperlipidemia, atherosclerosis, cardiovascular diseases, hyperglycemia, pancreatitis, osteoporosis, hyperuricemia,

hypertension, inflammatory bowel diseases, skin disorders related to an anomaly of differentiation of epidermic cells, angina pectoris, pulmonary hypertension, congestive heart failure, glomerulopathy, tubulointerstitial disorders, renal failure,
5 angiostenosis, peripheral vascular diseases, cerebral apoplexy, chronic reversible obstructive impairment, autoimmune diseases, allergic rhinitis, urticaria, glaucoma, diseases characterized by impaired intestinal motility, impotence, nephritis, cancer cachexia, restenosis after PTCA, or cachexia.

10

9. Use of the imidazole compound of claim 1 or a pharmaceutically acceptable salt thereof for the production of an agent for the prophylaxis and/or treatment of impaired glucose tolerance disorder, diabetes, gestational diabetes, diabetic complications,
15 insulin resistance syndrome, polycystic ovary syndrome, hyperlipidemia, atherosclerosis, cardiovascular diseases, hyperglycemia, pancreatitis, osteoporosis, hyperuricemia, hypertension, inflammatory bowel diseases, skin disorders related to an anomaly of differentiation of epidermic cells, angina
20 pectoris, pulmonary hypertension, congestive heart failure, glomerulopathy, tubulointerstitial disorders, renal failure, angiostenosis, peripheral vascular diseases, cerebral apoplexy, chronic reversible obstructive impairment, autoimmune diseases, allergic rhinitis, urticaria, glaucoma, diseases characterized by
25 impaired intestinal motility, impotence, nephritis, cancer cachexia, restenosis after PTCA, or cachexia.

10. A method of preventing and/or treating impaired glucose tolerance disorder, diabetes, gestational diabetes, diabetic
30 complications, insulin resistance syndrome, polycystic ovary syndrome, hyperlipidemia, atherosclerosis, cardiovascular diseases, hyperglycemia, pancreatitis, osteoporosis, hyperuricemia, hypertension, inflammatory bowel diseases, skin disorders related to an anomaly of differentiation of epidermic
35 cells, angina pectoris, pulmonary hypertension, congestive heart failure, glomerulopathy, tubulointerstitial disorders, renal failure, angiostenosis, peripheral vascular diseases, cerebral apoplexy, chronic reversible obstructive impairment, autoimmune diseases, allergic rhinitis, urticaria, glaucoma, diseases
40 characterized by impaired intestinal motility, impotence,

nephritis, cancer cachexia, restenosis after PTCA, or cachexia, which comprises administering the imidazole compound of claim 1 or a pharmaceutically acceptable salt thereof.